**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

PAPST LICENSING GMBH & CO., K.G.
 	
        Plaintiff,
 	
v.
 	
APPLE INC.,
 	
        Defendant.
	CIVIL ACTION NO. 6:15-CV-01095-RWS
	
	(LEAD CASE)
	
	JURY TRIAL DEMANDED

DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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In accordance with the Court's Second Amended Docket Control Order (Dkt. No. 154),

Defendants Apple Inc., Lenovo (United States) Inc. ("Lenovo"); Motorola Mobility LLC

("Motorola"); LG Electronics, Inc. LG Electronics U.S.A., Inc., and LG Electronics

MobileComm U.S.A., Inc., ("LG"); Huawei Technologies Co., Ltd. and Huawei Technologies

USA, Inc. ("Huawei"); Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.

("Samsung"); and ZTE (USA) Inc. ("ZTE") (collectively "Defendants") file this Responsive

Claim Construction Brief. Defendants' proposals, as set forth below, are consistent with the

claim language and intrinsic evidence, and the Federal Circuit's decision relating to two of the

five asserted patents. Defendants' proposals account for the numerous representations that the

patentee made to the Patent Office during the prosecution of the asserted patents.

I.   ARGUMENT

A.   The Means-Plus-Function Claims[1,2]

1.   *Relevant Law*

Although a presumption exists that § 112(6) does not apply to terms lacking the word

"means," that "presumption can be overcome and § 112, para. 6 will apply if the challenger

demonstrates that the claim term fails to recite sufficiently definite structure or else recites

function without reciting sufficient structure for performing that function." *Williamson v. Citrix*

Online, LLC, 792 F.3d 1339, 1349 (internal quotes and citations omitted). Therefore, the first

step in analyzing a claim term lacking the word "means," is whether the term "fails to recite

sufficiently definite structure" or recites function in the absence of structure for performing that

function. *Id*. The *Williamson* court explained that certain "[g]eneric terms such as 'mechanism,'

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[1] The five asserted patents share a common specification (hereinafter, the "specification").

[2] For purposes of this section, none of the Defendants agree that Papst's proposed construction is correct. Only Defendants Samsung, Lenovo, and Motorola affirmatively argue that § 112(6) is applicable. The other Defendants abstain from the § 112(6) argument but, contrary to Papst's assertions, do not agree that Papst's proposal is "unopposed."

'element,' 'device,' and other nonce words that reflect nothing more than verbal constructs may

be used in a claim in a manner that is tantamount to using the word 'means' because they

'typically do not connote sufficiently definite structure' and therefore may invoke § 112, para.

6." *Id.* at 1350. Furthermore, adding a modifier to one of these nonce words, without more, does

not connote identifiable structure. *See Media Rights Techs., Inc. v. Capital One Finan. Corp.*, 800

F.3d 1366, 1373 (Fed. Cir. 2015); *see also Tracbeam, LLC v. T-Mobile US, Inc.*, 6:14-CV-678-

RWS, 2016 WL 3751624, at *6 (E.D. Tex. July 14, 2016) (finding § 112(6) applicable where

the plaintiff's proposed construction "implicitly admits the[] terms are purely functional").

The Court may also consider "whether the intrinsic record redefined or disclaimed the

plain meaning of [the term] in a way that impart[s] sufficient structure." *See Core Wireless*

Licensing v. LG Elec., Inc., et al., 2015 WL 6746910 at *8 (E.D. Tex., Nov. 04, 2015).

However, a patentee may not avoid § 112(6) treatment "by arguing that the specification recites

sufficient structure" or describes how the claimed feature "is connected to and interacts with the

other components of the system, what processes the [feature in issue] performs, and what

structural subcomponents might comprise [feature in issue]." *Media Rights*, 800 F.3d at 1373

(2015). If the term at issue, read in light of the intrinsic record, fails to connote sufficient

structure, §112(6) applies; the inquiry then turns to "whether the specification discloses

sufficient structure that corresponds to the claimed function." *Williamson*, 792 F.3d at 1351. In

the event that the patent fails to disclose structure corresponding to the claimed function, then the

claim is invalid for indefiniteness under 35 U.S.C. §112(2). *See id.* at 1354.

2.   *The Connecting Device Terms*

Term Dispute	Plaintiff's Construction	Defendants Samsung, Lenovo, and Motorola Construction
"a first connecting device for interfacing the host device with the interface device via the multi-	"a component or group of components for interfacing the interface device with the host	Subject to §112(6) **Function**: [Agreed] interfacing the host device with the interface device via the

Term Dispute	Plaintiff's Construction	Defendants Samsung, Lenovo, and Motorola Construction
purpose interface of the host device" ['399 Patent, claims 1, 11; '449 Patent, claims 1, 17] "interfacing of the host device with a first connecting device of the interface device via the multi-purpose interface of the host device" ['399 Patent, claims 14]	device" If M+F, alternatively: **Function:** [Agreed] **Structure:** Fig. 1 and associated text	multi-purpose interface of the host device. **Structure**: 12xx structures as described at '399, col. 9:30-48 and Fig. 2.
"a second connecting device for interfacing the interface device with the data transmit/receive device" ['399 Patent, claims 1, 11; '449 Patent, claims 1, 17] "interfacing of the data transmit/receive device with a second connecting device of the interface device" ['399 Patent, claims 14]	"a component or group of components for interfacing the interface device with the data transmit/receive device" If M+F, alternatively: **Function:** [Agreed] **Structure:** Fig. 1 and associated text ('399 and '449 Patents)	Subject to §112(6) **Function**: [Agreed] interfacing the interface device with the data transmit/receive device. **Structure**: 15xx structures as described at '399, col. 9:49-64 and Fig. 2.

The Connecting Device Terms meet the standard for applying § 112(6) treatment under *Williamson* because they have no structural meaning and the specification does not redefine the meaning of "connecting device" in a way that connotes structure—both facts are *admitted by both Papst and its expert*. For years Papst argued that the Connecting Device Terms were purely functional terms.[3] Now, faced with the Federal Circuit's subsequent *Williamson* decision, Papst reverses course and attempts to argue that the Connecting Device Terms somehow convey structural meaning and are not subject to the requirements of § 112(6). Those arguments fail at every turn. "Device" is a well-established "nonce" word that reflects nothing more than a verbal

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[3] Papst relied on this exaction position in persuading the Federal Circuit to vacate the MDL Court's claim construction order when it asserted that, "the plain meaning of 'device' [in the "second connecting device"] … only signifies something 'designed to serve a purpose or perform a function." Ex. 16, Br. for Appellant Papst at 65. Remarkably, Papst now asserts that the Federal Circuit opinion somehow instructs this Court that it cannot limit the "connecting device" terms to "an embodiment." *See* Dkt. 175 ("Papst Br.") at 5. Contrary to Papst's assertion the Federal Circuit was merely applying general rules about whether embodiments serve to limit claim terms that are *not* means-plus-function terms. 778 F.3d at 1263-64.

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construct that is tantamount to using the word "means." *Williamson*, 792 F.3d at 1350. Papst

proposed construction is "a component or group of components for interfacing the interface

device with the host device." Papst's proposal merely replaces the well-established nonce word

"device" with another well-established nonce word "component" and removes the modifier

"connecting." *See* MPEP § 2181(b). This creates an entirely new clause, which itself is claimed

in terms of means-plus-function. Thus, the plain language of the Connecting Device Terms

indicates that § 112(6), even as defined by Papst, should apply.

It is also undisputed that nothing in the specification or prosecution would inform one of

skill in the art about the structural nature of the "connecting device" term or otherwise impart

structure to it. As Dr. Perry opines, one of ordinary skill in the art would not understand the

specification to redefine the terms "device" or "connecting device" in a way that imparts

structure to the terms. *See, e.g.*, Ex. 1, Dec. 6, 2016 Decl. of Dewayne E. Perry, Ph.D. ("Perry

Decl.") ¶¶ 38-39.[4] Dr. Fernald asserts that the word "device" is used broadly without imparting a

specific structural definition to "connecting device." *See* Ex. 2, Dkt. 175-8, Decl. in supp. of

Papst's Br. ("Fernald Decl.") ¶ 35 (noting that the inventor intended "connecting device" to be

broadly understood and "[i]f the Inventor's intent was to narrow the scope of the claims which

recite "connecting device," e.g. to a specific connector type or family, the Inventor could have

chosen an appropriate and more narrow term."); Ex. 4, Fernald Tr. at 36:22-37:5 (admitting that

the inventor "used the term 'device' broadly across the specification). Moreover, Papst admits

that "'connecting device' plainly describes the function is performs …." Papst Br. at 9.

Adding the modifier "connecting"—which does no more than parrot the claimed

function— connotes no definite structure. Perry Decl. ¶ 38. As a result, § 112(6) applies and the

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[4] All exhibits herein are attached to the Declaration of Jonathan L. Hardt.

Court should adopt the Defendants' proposed construction because it is supported by the specification and is the only proposed construction that avoids a "black box" with no structural limitation on the claimed function.

<div align="center">

a.   The Connecting Device Terms Have No Structural Meaning

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Dr. Fernald admits that the specific hardware (i.e., the components) needed to comprise the connecting devices is both "flexible" and "non-essential," and depends on the devices that will be connected together. *See, e.g.,* Fernald Tr. at 31:2-6; 34:13-35:7. He admits the specific components comprising the connecting devices "could vary depending upon . . . design choices" because there are "usually multiple ways of solving [the] problems" of connecting devices together. *See id.* at 35:4-7. Dr. Fernald admits that to impart structural meaning to the term "connecting device," additional details, not found in the specification or claims, are needed because "there is not one specific way" of forming a connecting device "that is essential to meeting the remaining parts of the claim." *Id.* at 35:13-15; *see also id.* at 31:2-6, 36:9-16.

Dr. Fernald's admissions are the logical result of his definition of "connecting device" and the functional nature of Papst's proposed constructions for the Connecting Device Terms. He admits that he defines "connecting device" in functional terms,[5] and he confirms that Papst's constructions are the result of merging the functions carried out by the Connecting Device Terms with the phrase "component or group of components."[6] This leads Dr. Fernald to conclude that the Connecting Device Terms are not limited to any specific type or family of connectors. *See* Fernald Tr. at 39:6-15;[7] *see also* Perry Decl. ¶¶ 40-41.

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[5] Dr. Fernald confirmed that the portion of his definition, after the word "for," merely recites the function carried out by the connecting device. *See id.* at 29:21-30:25.

[6] Dr. Fernald also admits that the function of the connecting devices and the functional component of Papst's proposed construction are the same. *See id.* at 54:7-56:10.

[7] "Q. Is it your opinion that the term 'connecting device' is not limited to a specific connector

Courts in this District have found §112(6) to be applicable in similar circumstances in which the terms at issue are merely "verbal constructs" and are not limited to a particular class of structures. *See, e.g.*, *Cellular Comm'ns Equip. LLC v. Samsung Elect. Co.*, 2016 WL 1237429, at *8 (E.D. Tex. Mar. 29, 2016) ("disclosure that the controlling entity 'may be' a dedicated software agent or a Digital Rights Management (DRM) agent . . . does not demonstrate that the term 'controlling entity' refers to any particular class of structures."); *Intellectual Ventures II, LLC v. Bitco*, 6:15-cv-60, 2016 WL 125594 at *26 (E.D. Tex., Jan. 11, 2016) (finding the term "encryption/decryption module" was not limited beyond the function identified in the specification); *see also Williamson*, 792 F.3d at 1350 ("Generic terms such as 'mechanism,' 'element,' 'device,' and other nonce words that reflect nothing more than verbal constructs."). Here, the "Connecting Device Terms" fail to "recite sufficiently definite structure," and as such § 112(6) applies. *See Williamson*, 792 F.3d at 1349.

> b.   *The Connecting Device Terms Are Limited To The Structure Disclosed In The Specification*

The parties agree that the claimed function of the "first connecting device" is "interfacing the host device with the interface device via the multi-purpose interface of the host device" and that the claimed function of the "second connecting device" is "interfacing the interface device with the data transmit/receive device." The corresponding structure in the specification must therefore perform these functions. *See Williamson*, 792 F.3d at 1351-52.

Figure 2 of the patents shows the corresponding structure for the first connecting device (yellow highlighting) and the second connecting device (pink highlighting):

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type? A. Yes. Q. Is it your opinion that the term 'connecting device' is not limited to a specific connector family? [] A. Yes, that's correct."
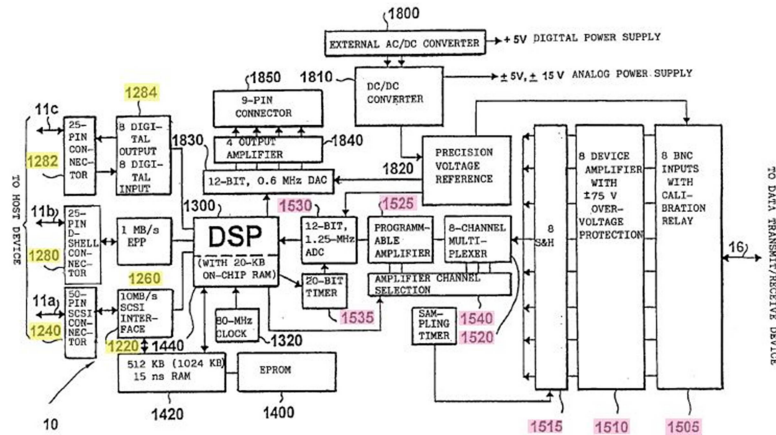
FIG.2

In describing Fig. 2, the specification provides specific detail about the structure of the

two connecting devices:

> **the first connecting device** 12 of FIG. 1 contains the following components: an
> SCSI interface 1220 and a 50-pin SCSI connector 1240 . . . an EPP (enhanced
> parallel port) [1260] . . .connected to a 25-pin D-shell connector 1280 . . . a 25-pin
> connector 1282 which permits the attached of 8 digital outputs and 8 digital inputs
> 1284 .

<div align="center">* * *</div>

> **the second connecting device** comprises 8 BNC inputs with the calibration relay
> 1505, a block 1510 with 8 device amplifiers with an overvoltage protection of ±75 V,
> this block being connected in turn to sample/hold (S&H) circuits 1515. …. Each
> sample/hold circuit is connected to a corresponding input of an 8-channel multiplexer
> 1520 which feeds its output signals via a programmable amplifier 1525 into an
> analog/digital converter (ADC) with 12 bit and 1.25 MHz 1530 and to the DSP 1300.
> The ADC 1530 is controlled by means of a 20-bit timer 1535, as known by persons
> skilled in the art. The programmable amplifier 1525 and the 8-channel multiplexer
> 1520 are controlled via an amplifier channel selection circuit 1540 which is in turn
> controlled by the DSP 1300.

'399 patent, col. 9:30-64 (emphasis added).

These disclosures constitute the only structure identified in the specification for either

"connecting device." The 12xx and 15xx structures, corresponding to the first connecting device

12 and second connecting device 15 of Fig. 1 respectively, are necessary to perform the claimed

"interfacing" functions. *See* Perry Decl. ¶¶ 48-50, 52-54. The "first connecting device" requires

any one of the three pairs of structures shown in Fig. 2 described in the specification. *See* '399

patent, col. 9:30-48 ((i) SCSI interface 1220/SCSI connector 1240; (ii) EPP 1260/connector

1280; and (iii) digital outputs and inputs 1284/connector 1282)). The only disclosed structure for

the "second connecting device" requires all the 15xx structures depicted in Fig. 2. *See* '399

patent, col. 9:49-64. Remarkably, Papst asserts that the corresponding structure is simply the

black boxes found in Figure 1. *See* Papst Br. at 12.
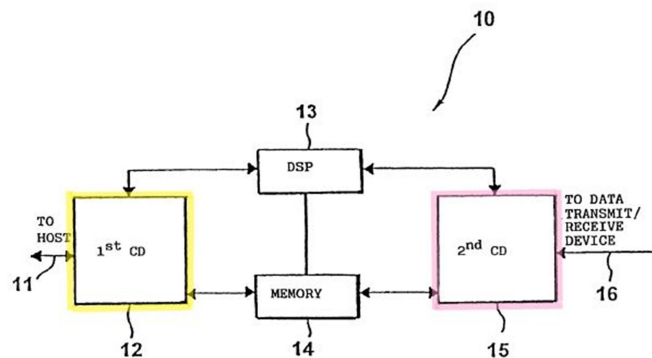
FIG.1

Although Papst asserts that its proposed structure is "limited to only what is necessary to

perform the function," it is in fact devoid of any structure whatsoever. In fact, Papst's expert

admits that Fig. 1 and its description do not convey any structure and that the exact structure of

boxes 12 and 15 will vary based on the design choices. *See* Fernald Tr. at 59:21-24; *see also id.*

at 61:9-25, 70:24-71:12.

These admissions acknowledge the fact that Papst's proposed structure is nothing more

than a black box that can change to fit any device capable of performing the function of the

claim. Such a construction is exactly the type of functional claiming that Congress and the

Williamson decision prevent. In contrast, Defendants' proposed structure actually identifies

structure performing the claimed function and is clearly supported by the specification. The

Court should therefore adopt Defendants' construction for the two "first connecting device"

terms and find the structure corresponding to the agreed function is the "12xx structures as described at '399 patent, col. 9:30-48 and Fig. 2," and the structure corresponding to the agreed function for the two "second connecting device" terms is the "15xx structures as described at '399 patent, col. 9:49-64 and Fig. 2."

3.   *The Command Interpreter Terms*

Term Dispute	Plaintiff's Construction	Defendants Samsung, Lenovo, and Motorola Construction
"first command interpreter" ['399 patent, claims 1, 11]	"a program that receives a command and executes some function based on that command" If M+F, alternatively: **Function:** [Agreed] **Structure**: '399 Patent Fig. 1; 6:19-26, 6:48-55	Subject to §112(6) **Function**: [Agreed] when receiving an inquiry from the host device as to a type of a device attached to the multi-purpose interface of the host device, sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is an input/output device customary in a host device, whereupon the host device communicates with the interface device by means of the [driver for the input/output device customary in a host device] [specific driver for the multi-purpose interface]. **Structure**: No algorithm, source code, or flow chart is disclosed for performing the recited function, therefore the term is indefinite.
"second command interpreter" ['399 patent, claims 1, 11]	"a program that receives a command and executes some function based on that command" If M+F, alternatively: **Function:** [Agreed] **Structure:** '399 Patent Fig. 1; 6:19-26, 6:48-55	Subject to §112(6) **Function:** [Agreed] interpret a data request command from the host device to the type of input/output device signaled by the first command interpreter as a data transfer command for initiating a transfer of the digital data to the host device. **Structure**: No algorithm, source code, or flow chart is disclosed for performing the recited function, therefore the term is indefinite.

Claims 1 and 11 of the '399 patent include the related terms "first command interpreter" and "second command interpreter" (collectively, "Command Interpreter Terms"). For the reasons set forth below, the Command Interpreter Terms should be construed under § 112(6) and, as such, should be found indefinite for failure to disclose structure for the claimed function.

a.   *Both the Intrinsic and the Extrinsic Evidence Shows the Command Interpreter Terms Have No Structural Meaning.*

The term "command interpreter," as used in the Command Interpreter Terms, is purely functional in nature and does not have a "sufficiently definite meaning as the name for structure." *See Williamson*, 792 F.3d at 1349. This is borne out by Papst's own construction for this term: "a program that receives a command and executes some function based on the command." Indeed, Papst asks the Court to construe the Command Interpreter Terms identically using its same functional definition.

Because of the purely functional nature of the term "command interpreter," it is not surprising that any of the experts in this case, or in the MDL proceeding, can provide a sufficiently detailed meaning for "command interpreter" as the name for structure. Dr. Fernald, Papst's expert before this Court, simply invokes Papst's construction as the meaning for the term "command interpreter," but concedes that a "program" is another word for software, and that Papst's construction consists of nothing more than the generic functional steps performed by the software's algorithm.[8] Papst's MDL expert, Mr. Robert Zeidman, on the other hand, testified that command interpreters can constitute "hardware or software or some combination."[9] Neither Dr. Fernald nor Mr. Zeidman could describe with any specificity the details of the structure for the claimed "command interpreter." Indeed, when Dr. Fernald was confronted with a dictionary definition *from his own declaration* that provided a narrowly tailored definition of the term "command interpreter," he testified that any such definition would be inapplicable to the claim terms at issue because, in his words, the definition "is far too narrow." Fernald Tr. at 85:12-20.

In Dr. Fernald's opinion, *any* program carrying out the generic functions in Papst's

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[8] Fernald Decl. ¶¶ 42, 45; *see also* Fernald Tr. at 73:4-15.
[9] *See* Ex. 5, June 28, 2016, Zeidman Tr. at 83:20-84:3; *see also* Ex. 6, Zeidman Supp. Decl. (Dkt. No. 634-1) at ¶¶6, 11-16.

proposed construction could be a "command interpreter," even though the specific attributes of the program will vary depending on multiple unknown design features including at least, the operating system employed, the programming language used, and the algorithm needed to carry out the function. *See, e.g.,* Fernald Tr. at 89:5-15; 81:16-23; 82:12-23; 81:2-9; and 78:23-79:5. Dr. Perry agrees and therefore opines that the term "command interpreter" describes only a functional concept that can be carried out in a variety ways, depending on the context. Perry Decl. ¶¶ 63-64. "Command interpreter" does not connote structure of any kind to one of skill in the art. Perry Decl. ¶ 60.

Additionally, one of ordinary skill in the art would not understand the claim language, the specification or the prosecution history to impart structure to the term "command interpreter." Perry Decl. ¶¶ 61-64; *see also Williamson,* 792 F.3d at 1351. The only reference in the specification to the Command Interpreter Terms occurs in column 6. *See* '399 patent, col. 6:48-67; *cf. id.* at 6:3-26. But as Dr. Perry explains, these disclosures do nothing more than parrot the agreed functions found in the Command Interpreter Terms. Perry Decl. ¶¶ 63-64 (explaining that the inquiry instruction and the read command examples provided in column 6 are, at best, recitations of the functions of the first command interpreter and second command interpreter).

Additionally, Dr. Perry opines that a person of ordinary skill in the art would understand that any program developed to carry out these agreed functions would vary in many different ways depending on implementation choices. Perry Decl. ¶¶ 63-64. Dr. Perry further opines that many different algorithms could be used to implement the concepts identified in column 6, and those disclosures fail to provide any detail about the structure of the "command interpreter." Perry Decl. ¶¶ 63-64, 67, 71. Papst's expert agrees on both fronts, conceding that the meaning of "command interpreter" as understood to a person skill in the art "depend[s] on the context"

(Fernald Tr. at 85:12-17; *see also id.* at 86:25-87:13), and will vary from implementation-to-implementation. *See id.* at 18:9-21; *see also id.* at 19:7-14.

Neither Papst nor its expert can refute the opinions of Dr. Perry that the term "command interpreter" is not understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. *See Williamson*, 792 F.3d at 1349; *see also Tracbeam*, at *7 (finding the defendant rebutted the presumption against § 112(6) applicability where, inter alia, "[d]espite being deposed on this very topic [the plaintiff's] expert never clearly states that these terms convey a well understood meaning to one of ordinary skill in the art."). This Court has previously found § 112(6) applicable in similar situations where the plaintiff's proposed construction of the term is purely functional, and should do so here. *See Tracbeam*, 2016 WL 3751624, at *6-7 (E.D. Tex.) (finding § 112(6) applicable where, inter alia, the plaintiff's proposed construction "implicitly admits the[] terms are purely functional").

> b.   *The Command Interpreter Terms Are Indefinite Because There Is No Corresponding Structure Disclosed*

Because the Command Interpreter Terms are not understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure, the inquiry turns to "whether the specification discloses sufficient structure that corresponds to the claimed function." *Williamson*, 792 F.3d at 1351. Here, the claims are indefinite because the specification fails to disclose sufficient structure for performing the agreed functions.

The specification fails to disclose any structure corresponding to the claimed functions[10] for the Command Interpreter Terms. Indeed, Papst fails to point to *any* disclosed structure that would carry out the functions of either the first command interpreter or the second command interpreter. Papst states that the "structure for the first command interpreter is disclosed in Fig. 1

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[10] The relevant parties agree on the claimed functions for "first command interpreter" and "second command interpreter." *See supra.*

and in col. 6 at 19-26 and 48-55, which describes that process." Papst Br. at 17. Papst also

states that the "structure for the second command interpreter is disclosed in Figure 1 and in col.

6:48-67, which further describes that process." *Id.* at 18. Papst's argument has one glaring

deficiency—it fails to tell the Court the specific structure for the command interpreters recited in

column 6. It fails to do so because no such specific structure appears in column 6, other than a

reference to a general purpose processor. Perry Decl. ¶¶ 62-64.   Indeed, Papst's own argument

concedes this point when it states that column 6 "further describes that process." Column 6

describes only the functions being performed by the claimed invention. Perry Decl. ¶¶ 62-64. It

does not describe the structures of the command interpreters. Perry Decl. ¶ 71. Because the '399

patent fails to disclose the specific components that carry out the functions of the Command

Interpreter Terms, those terms are indefinite. *See Alfred E. Mann Found. for Sci. Research v.*

Cochlear Corp., No. 2015-1580, 2016 WL 6803052, at *6 (Fed. Cir. Nov. 17, 2016) ("Since the

patent does not disclose which component performs the logarithmic conversion function, the

specification does not disclose 'with sufficient particularity the corresponding structure for

performing the claimed function ....'") (quoting *Triton Tech of Tex., LLC v. Nintendo of Am.,*

Inc., 753 F.3d 1375, 1378 (Fed. Cir. 2014).

At most, the Court could find that column 6 discloses a generic "digital signal processor

... or any other of microprocessor" that "*comprises* a first and a second command interpreter."

Setting aside that the claim language does not require the command interpreters to be part of the

claimed processor (the claim language only requires that the "*interface device [be] configured* by

the processor and the memory *to include* a first command interpreter and a "second command

interpreter"), *see* '399 patent, claim 1, a generic processor[11] is not by itself sufficient corresponding structure under 112(6). *Triton Tech*, 753 F.3d at 1378. In order to transform a general purpose processor into a special purpose processor specifically programmed to carry out the claimed functions, the specific algorithm for performing the claimed function must be disclosed and clearly linked to the claimed function. *Id.* at 1378-79.

The specification fails to disclose an algorithm for performing the claimed functions. Perry Decl. ¶ 71. Tellingly, Papst's expert, Dr. Fernald, failed to offer any opinions about the specific structure of the "command interpreters," including whether a specific algorithm for performing the functions of the Command Interpreter Terms is disclosed. *See* Fernald Decl. ¶¶ 41-46.[12] Papst's nonetheless attempts to argue that column 6 "discloses an example algorithm in complete detail." Papst Br. at 18. Papst's assertion is unsupportable. The inquiry command and file transfer commands identified by Papst are simply generic functional commands. *See* Perry Decl. ¶¶ 63-64. The Federal Circuit has established that such generic disclosures are insufficient and the simple fact that a person of ordinary skill in the art might know how to arrive at the functional result does not constitute structure. *See Alfred E. Mann Found.*, 2016 WL 6803052 at *6 ("Although Cross-Appellants argue that a person of ordinary skill in the art would know of potential logarithmic conversion functions to implement . . . this does not create structure in the patent where there was none to begin with."); *see also Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009) ("The question before us is whether the specification contains a sufficiently precise description of the 'corresponding structure' to satisfy section 112,

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[11] The specification discloses that the digital signal processor of Figure 1 "can be any DSP." '399 Patent, col. 9:17-20. The digital signal processor identified in column 6 "may be any [] kind of microprocessor." *Id.* at 6:48-52.
[12] Unlike his opinion for the Connecting Device Terms, Dr. Fernald offers no evidence of disclosed structure if the Court finds § 112(6) applicable.

paragraph 6, not whether a person of skill in the art could devise some means to carry out the recited function."). Moreover, the language of column 6 is nothing more than the same functional language that is claimed. *See* Perry Decl. ¶ 71. Such disclosure of the claimed function in the specification does not constitute sufficient disclosure. *See Triton Tech*, 753 F.3d at 1378 ("[T]he patent specification must disclose with sufficient particularity the corresponding structure for performing the claimed function and clearly link that structure to the function.").

Even given its most liberal (and unsupportable) reading, column 6, at best, discloses a broad class of algorithms. Dr. Fernald conceded that the program for carrying out the functions of the command interpreters would vary depending on variables such as the operating system and programming language. *See supra*. Dr. Perry opines that the disclosures in column 6 of the patents represent a broad class of algorithms for carrying out functions such as those corresponding to the Command Interpreter Terms. *See* Perry Decl. ¶¶ 63-64. But disclosing a broad class of algorithms does not limit the scope of corresponding structure, as required by § 112(6). *See Triton Tech.*, 753 F.3d at 1379 ("Disclosing the broad class of [logarithmic conversion] does not limit the scope of the claim to the 'corresponding structure, material, or acts' that perform the function, as required by Section 112.").

B.   Multi-Purpose Interface

Term to be Construed	Papst's Proposal	Defendants' Proposal
"multi-purpose interface" [every asserted claim]	No construction necessary apart from the other proposed constructions, if any.	"an interface comprising both an interface card and specific driver software for the interface card"

Defendants' construction for the term "multi-purpose interface" is the proper construction because the specification clearly provides a definition for the term "multi-purpose interface" and expresses a clear intention to redefine "multi-purpose interface." As such, the patentee has acted as its own lexicographer and ascribed a particular meaning to the term "multi-purpose interface."

To act as its own lexicographer, a patentee must "clearly set forth a definition of the disputed claim term" other than its plain and ordinary meaning. *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). It is not enough for the patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments: the patentee must "clearly express an intent" to redefine the term. *Id*. Here, the specification clearly provides a definition for "multi-purpose interface" and clearly expresses the intent to redefine the term.

The specification defines multi-purpose interface as follows: "Multi-purpose interfaces comprise both an interface card and specific driver software for the interface card." '399 patent, col. 4:44-46. That definition is clear and unambiguous: a "multi-purpose interface," as used in the specification and in the claims, has at least two things: (1) an interface card **and** (2) specific driver software for that interface card. Defendants' proposed construction uses this exact definition.

The specification also demonstrates the clear intent of the patentee to redefine "multi-purpose interface" in the same way. In the Summary of the Invention, the specification states that "[i]t is an object of the present invention to provide an interface device for communication between a host device and a data transmit/receive device." *Id.,* col. 3:25-28. The Summary of the Invention then describes three aspects of the present invention in terms of the configuration of the "interface device" and the devices to which it is interfaced. *Id.*, col. 3:29-4:22. In each aspect of the present invention, the "interface device" is interfaced with the "multi-purpose interface" of the host computer. *Id.* The differences among the aspects of the present invention lie in the software used to communicate between the "interface device" and the "multi-purpose interface." The asserted patents provide two choices for this communication software: (1) the

"driver for the input/output device customary in a host device" (also referred to as "the usual driver" for the input/output device) or (2) the "specific driver for the multi-purpose interface."

In the first and third aspects of the present invention, the communication software is option (1). In the second aspect of the present invention, the communication software is option (2). This makes perfect sense because the disclosed invention is designed to either use the specific driver software (that is part of the multi-purpose interface) or bypass that software and use driver software for input/output devices customary in the host computer. As the specification states:

> The interface device according to the present invention therefore no longer communicates with the host device or computer by means of a specially designed driver but **by means of a program which is present in the BIOS system (Basic Input/Output System)** and is normally precisely matched to the specific computer system on which it is installed, **or by means of a specific program for the multi-purpose interface**. Consequently, the interface device according to the present invention combines the advantages of both groups.

Id., col. 5:13-22 (emphasis added). The specification explains that this configuration provides an important advantage:

> **An important advantage of the interface device 10 of the present invention** is that it also permits extremely high data transfer rates **by using, for data interchange, the host device own BIOS routines** which are optimized for each host device by the host device manufacturer or BIOS system manufacturer, **or by using driver programs which are normally optimized and included by the manufacturers of multi-purpose interfaces**.

Id., col. 8:43-50 (emphasis added).

Given these teachings of the specification, the patentee "clearly expressed an intent" to redefine the term "multi-purpose interface." And the patentee "clearly set forth a definition" for multi-purpose interface: "Multi-purpose interfaces comprise both an interface card and specific driver software for the interface card." *Id.*, col. 4:44-46. As it must, Defendants' proposed construction uses this definition acknowledging the lexicography choices made by the patentee.

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Papst simply ignores the patentee's clear definitional choices. Papst argues that

Defendants' construction is improper because "a 'multi-purpose interface' is not limited to

implementation on a 'card' (*e.g.*, a separate PCB inserted into a host device)." Papst Br. at 19.

Papst relies almost solely on extrinsic evidence to support its position. But Papst's expert

ignored the clear definition set forth in specification for "multi-purpose interface."

> Q. Despite the difference that the word "both" is not in the construction, defendants' construction says that a "multi-purpose interface comprises an interface card and a specific driver for the interface card," and the patent, in Column 4, at Lines 44 through 46, also says that a "multi-purpose interface comprises both an interface card and specific driver software for the interface card." Correct?

> A. Yes. That's – that's the exact statement in the specification.

> * * *

> Q. Despite the specification saying that's what a multi-purpose interface comprises, you concluded that a multi-purpose interface needs neither an interface card or a specific driver for the interface card. Correct?

> A. Yes, that is correct.

Fernald Tr. at 117:18 – 118:18.

Papst also cites two specification excerpts as support for its argument. Papst Br. at 19.

But neither of those excerpts changes the meaning that the patentee clearly ascribes to "multi-

purpose interface." The first citation ('399 patent, col. 2:12-13) from the Background of the

Invention does not relate to the term "multi-purpose interface" at all. Rather, the "interface"

being discussed is the interface for connecting a host computer to a data transmit/receive device;

in other words, a prior art interface to the one being claimed. The second citation (*id.,* col. 4:52-

56) merely acknowledges that the specific driver software that is part of the multi-purpose

interface can be integrated in the host computers BIOS routines. The patentee plainly and clearly

defined "multi-purpose interface" as comprising "both an interface card and specific driver

software for the interface card." The location of the specific driver software does not change that clear definitional requirement that to be a multi-purpose interface you must have **both** an interface card **and** specific driver software for that interface card.

Papst also argues that the "plain language of the term 'multi-purpose interface' does not suggest the interface must have a specific driver." Papst Br. at 19. Here again, Papst relies on the extrinsic testimony of its expert. But Dr. Fernald admits that all "multi-purpose interfaces" have associated driver software. Fernald Tr. at 106:22-107:2.[13] Papst also points out that some claims specifically require the use of a specific driver for the "multi-purpose interface." That is precisely the point: the disclosed inventions have two possible uses: (1) to communicate using a driver in the BIOS routines for customary I/O devices found on the host computer; or (2) to communicate using the specific driver software that is part of the multi-purpose interface. In other words, the claimed inventions either use the specific driver software that is always part of the "multi-purpose interface," or they bypass it and use other driver software found in the BIOS routine of the host for customary I/O devices.

Given the specification's clear definition of "multi-purpose interface" and the clear intent of the patentee to redefine the term "multi-purpose interface," the Court should adopt Defendants' proposed construction and construe "multi-purpose interface" to mean "an interface comprising both an interface card and specific driver software for the interface card."

C.   The Send a Parameter/Signal Terms

Exemplary Term to be Construed	Papst's Proposal	Defendants' Proposal
"sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface	No construction necessary apart from the other proposed constructions, if any.	"sends a signal to the host device in response to the inquiry that misidentifies the class of the device connected to the host device as [an

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[13] "Q. You would agree with me that each multi-purpose interface has an associated driver software. Correct? [] A. At least one."

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device, to the host device which signals to the host device that it is an input/output device customary in a host device" ['399 patent, claims 1, 11]		input/output device] [a storage device] customary in a host device"
"at least one parameter indicative of the class of devices to be sent to the computer through the multipurpose interface of the computer, independent of the analog source, wherein the analog data acquisition device is not within the class of devices" ['746 patent, Claim 1]	No construction necessary apart from the other proposed constructions, if any.	"at least one parameter that misidentifies the class of the analog data acquisition device"
"the at least one parameter" ['746 patent, claims 15, 17, 34; '144 patent, claims 1, 27, 28, 29, 31, 34, 35, 61, 84, 86, 87; '437 patent, claims 1, 22, 25]	No construction necessary apart from the other proposed constructions, if any.	"the at least one parameter that misidentifies the class of the [ADGPD] [analog data acquisition device] to the computer"

Numerous clear and unmistakable statements made by the patentee in the prosecution of the asserted patents to distinguish the alleged inventions over prior art mandate Defendants' construction. Indeed, including the word "misidentify" in Defendants' construction is appropriate because it originates with the patentee's own disclaimers and statements during prosecution. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-83 (Fed. Cir. 1996) ("[T]he record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims. . . The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.") (citations omitted). In urging this Court not to construe the terms at issue beyond their "plain meaning," Papst now seeks to improperly recapture claim scope that it explicitly surrendered to get the claims allowed. *Omega Engineering, Inc, v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003).

Papst first made the disclaimer during the prosecution of the parent '399 patent when the claims were rejected over the McNeill reference. In response, Papst amended the claims to recite a "first command interpreter" that (in combination with pre-amendment claim language) sends a

signal to the host device "which signals to the host device that it is an input/output device customary in a host device." Ex. 7, '399 FH, Mar. 18, 2002 Amend. at 7. To distinguish McNeill, Papst stated the following:

> In addition, this reference does not include a first command interpreter that, when asked by the host device as to the type of device connected to the interface, ***lies to the host computer*** as to the real nature of the data transmit / receive device. In McNeill, Jr. et al., the initiator asks for a hard disk and the target states that there is a hard disk. In other words, ***the target does not <u>lie</u> as to the true type of the data transmit/receive device***.

Id. at 6 (emphasis added). Accordingly, Papst clearly and unambiguously distinguished the prior art on the basis that the claimed interface device "***<u>lie[s]</u> as to the true type of the data transmit/receive device***," *i.e.*, that the signal sent by the first command interpreter in the interface device ***misidentifies*** the type of device actually connected to the host via the interface device.

Papst made the same disclaimer in the prosecution of other asserted patents. For example, when distinguishing prior art during prosecution of the '144 patent, Papst argued that the cited reference was unlike the claimed invention because it did not send a parameter that misidentified the attached device:

> [The prior art] does not suggest to one of ordinary skill in the art the operation and identification of an analog acquisition and processing device as an entirely different type of device, i.e. a hard disk, and ***does not suggest a device which sends an identifying parameter to the host computer identifying the device as a device of dramatically different type that what it actually is***.

Ex. 8, '144 FH, July 26, 2010 Appellant's Br. on Appeal at 34 (emphasis added).[14] Yet again, during prosecution of the '746 patent, Papst distinguished prior art references for failing to send a parameter to "mis-identify[]" the connected device:

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[14] In an earlier amendment Papst likewise argued that all of the claims require misidentification: "All of the claims presented in this preliminary amendment generally require that ***the ADGPD send a response signal*** that allows a PC to automatically and without user intervention recognize that it can communicate with the ADGPD ***as if it were a commercially available mass storage device even though it is not a commercially available mass storage device***." Ex. 9, '144 FH,

> This assumption would inherently call for the device to correctly identify itself which is contrary to ***the claim requirement that the class parameter sent to the host computer identify a different class of device***.

Ex. 11, '746 FH, May 28, 2013 Amend. at 22-23 (emphasis added).

> Hashimoto merely describes a process for detection by the camera of an active connection by monitoring the interface. This detection process is not ***the recognition process claimed which is a process in which the analog device processor executes instructions to cause a class identifying parameter (mis-indicative of the class of the device) to be sent to the host computer*** (i.e. automatically sends a identifying parameter to the host computer)
>
> [N]either Hashimoto nor any of the other cited references disclose a processor in the peripheral device involved in automatically ***sending a mis-identifying class parameter to the host computer***.

Id. at 12 (emphasis added).[15] The disclosure above not only expressly includes the mis-identify language ("mis-identifying"), but also characterizes the act as a "claim requirement." And Papst continued to make the same disclaimer during the prosecution of the '437 patent where it amended the claims to expressly include the "at least one parameter" limitations.[16] Papst then argued that the amended claims were distinguishable from the prior art Shinohara reference because Shinohara "does not suggest[] to one of ordinary skill in the art the operation and identification of an analog generating and processing device ***as an entirely different type of device***, i.e. a mass storage device, and does not suggest a device which sends ***an identifying***

Aug. 24, 2006 Amend. at 12 (emphasis added); *see also* Ex. 10, '144 FH, May 2, 2008 Amend. at 8.

[15] There are many other instances of Papst urging the PTO to reject prior art on this same ground. *See, e.g.*, Ex. 12, '746 FH, Dec. 27, 2011 Amend. at 18 (distinguishing Shinohara because "Shinohara is merely a mass storage device acting as a mass storage device"); Ex. 13, '746 FH, Oct. 29, 2012 Amend. at 14 ("Further, sending a mis-identifying class parameter would be contrary to the concept of plug and play, then [sic] teaching away from the claimed feature."); Ex. 11, '746 FH, May 28, 2013 Amend. at 23 ("It is a huge inventive step to go from a digital mass storage device emulating a digital mass storage device to an analog device emulating a digital mass storage device.").

[16] For example, Papst amended claim 1 to recite "at least one parameter *identifying the analog data generating and processing device, independent of analog data source, as a digital storage device instead of as an analog data generating and processing device*."). Ex. 14, '437 FH, Sept. 24, 2010 Amend. at 2 (emphasis added).

parameter to the host computer <u>identifying the device as a device of a dramatically different</u>

<u>type tha[n] what it actually is</u>." Ex. 14, '437 FH, Sept. 24, 2010 Amend. at 23-24 (emphasis

added).

Papst has made numerous, consistent, and definitive statements to the Patent Office

relying on the principle of misidentification to differentiate prior art, meaning that Papst has

disclaimed all claim scope that is inconsistent with the position it took during prosecution. *See*

Omega Eng'g., 334 F.3d at 1324. Papst has therefore limited its alleged inventions to an

interface device that misidentifies the attached device to the host by sending a signal or a

parameter that "lies" about or "mis-identifies" the nature of the connected device to the host.

Adopting Papst's "plain meaning" construction now would sweep the intrinsic record to the side

and recapture claim scope that was clearly surrendered during prosecution. *See Microsoft Corp.*

v. Multi-Tech Systems, 357 F.3d 1340, 1349-50 (Fed. Cir. 2004) (statements made during

prosecution of related patents sharing the same written description can be limiting with respect to

any patents in the same family).

In addition to the prosecution history, the specification provides compelling support for

Defendants' construction. For example, the "Summary of the Invention" section of the

specification teaches that the claimed "interface device" receives an inquiry from the host device

as to the type of the device attached to the host and in response to this inquiry "sends a signal,

regardless of the type of the data transmit/receive device, to the host device . . . which signals to

the host device that it is communicating with an input/output device." '399 patent, col. 4:65-5:6.

Through this signal, "[t]he interface device according to the present invention therefore

simulates, both in terms of hardware and software, the way in which conventional input/output

device functions, preferably that of a hard disk drive." *Id.*, col. 5:6-9 (emphasis added).

The specification explains that this *simulation* of a conventional input/output peripheral by the interface device achieves the primary stated goal of the invention of allowing any specialized data transmit/receive device to connect to the host computer via the interface device without the need for specialized device driver software to be loaded on the host: "By *simulating* an input/output device to the host device . . . the interface device is automatically supported by all known host systems without any additional sophisticated driver software." *Id.*, col. 12:25-29 (emphasis added). In the disclosed embodiments, the interface device performs this simulation by informing the host computer that it is communicating with a hard drive, regardless of the identity of the actual data transmit/receive device attached to the host via the interface device. *Id.*, col. 6:19-22. Accordingly, the specification is consistent with the file history in that it describes an interface device that sends a signal to the host computer that misinforms the host as to the nature of the attached device.

Papst's opening claim construction brief wrongly ignores the intrinsic record and instead states that "there is simply nothing in the claim language that requires a 'misidentification' of the class of device to the host device" and conjures up non-existent "conflicts" between the claim language of the '399 patent and other asserted patents and the misidentification requirement. Papst Br. at 22-23. Papst's current characterization is contradicted not only by the specification and by the patentee's statements to the PTO, but also by statements Papst made to the Federal Circuit when it described the '399 and '449 patents as claiming an invention that "*always 'lies' to the 'host device' by identifying itself via a 'signal'*" that it is a 'customary' hardware device for which the host already has software drivers." Ex. 15, Reply Br. for Appellant Papst at 1, *In re Papst Licensing Digital Camera Patent Litigation*, 778 F.3d 1255 (Fed. Cir. 2015) (No. 2014-1110). At oral argument in that case, Papst's counsel further informed the Federal Circuit that

"the focus of the claimed invention here is with the interface device's ability to **dupe** or **trick** a host device" by "having the interface device pretend or simulate itself to the host computer system . . . by saying – **lying** – to the host computer if you will, that no, no, I'm a customary device . . . That's how the invention here is claimed." Audio Recording of Oral Argument (Dec. 3, 2014) at 1:34-54; 3:35-4:17; 14:02-14:49; 16:31- 17:06; 21:45-21:56) (available at http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2014-1110.mp3) (emphasis added).

Papst's allegation that there is some "conflict" between the Defendants' proposed constructions and the claim language is nonsensical. Using the '399 patent as an example, Papst alleges that the misidentification requirement may conflict "with the claim requirement that the identification will be 'regardless of the type of . . . device attached.'" Papst Br. at 22-23. The only supposed example of this "conflict" provided by Papst is where the attached device is a hard drive. *Id.* However, the '399 patent requires that the attached device is "arranged for providing analog data." '399 patent, col. 12:45-46. Hard drives, on the other hand, have digital data. In fact, during prosecution of the '399 patent, the patentee distinguished prior art that attached a magnetic disk hard drive on the basis that "[t]his reference does not disclose that the data transmit/receive device is arranged for providing analog data. It is well known that digital data are stored on magnetic disks." Ex. 7, '399 FH, Mar. 18, 2002 Amend. at 5; *see also* Ex. 13, '746 FH, Oct. 29, 2012 Amend. at 16-17 (distinguishing a prior art reference of an attached flash hard drive because this "is entirely different from the claimed analog data acquisition device which acquires analog data from analog sources."). In other words, Papst disclaimed the very example that it now proffers as proof of an alleged "conflict." For all of these reasons the Court should adopt the Defendants' construction and reject Papst's attempt to recapture claim scope surrendered during prosecution.

D.   The Automatic Terms

Term to be Construed	Papst's Proposal	Defendants' Proposal
"automatic"/"automatically" ['746 patent, claims 1, 17; '144 patent, claims 1, 86; '437 patent, claims 1, 43][17]	No construction necessary apart from other proposed constructions, if any	Lenovo/Motorola: "to independently perform an action without any external influence or control" Samsung/Apple/ZTE/LG/Huawei: "without any user intervention"
"automatic transfer" ['437 patent, claim 1]	No construction necessary apart from other proposed constructions, if any	Samsung/Apple/ZTE/LG: "transfer without any user intervention"
"automatic file transfer process" ['144 patent, clams 1, 86; '437 patent, claim 1]	No construction necessary apart from other proposed constructions, if any	Samsung/Apple/ZTE/LG: "transfer without any user intervention"
"automatic recognition process" ['144 patent, claims 1, 86; '437 patent, claim 1]	"process by which the computer recognizes the ADGPD upon connection with the computer without requiring any user intervention other than to start the process"	No construction necessary apart from other proposed constructions

1.   *Lenovo & Motorola Proposal: The Court Can Solve the Dispute and Preserve the Meaning of The Claims by Construing Only the Terms "Automatic" and "Automatically"*

In order to understand the meaning of "automatic/automatically," it is important to understand the context in which those terms are used. In the context of the asserted claims, the "automatic" terms relate to actions performed by the processor of the claimed interface device.

As an example, Claim 1 of the '746 patent[18] reads, in part:

> e) wherein when the analog acquisition device is operatively interfaced with the multipurpose interface of the computer, **the processor executes at least one instruction set** stored in the program memory and thereby **automatically causes at least one parameter indicative of the class of devices to be sent to the computer** through the multi-purpose interface of the computer, independent of the analog source, wherein the analog data acquisition device is not within the class of devices;

Similarly, claim 1 of the '144 patent[19] reads, in part:

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[17] The list of asserted claims in which the term appears is updated to reflect Papst's preliminary election of asserted claims.

[18] Claim 1 is asserted through dependent claim 6.

[19] Claim 1 is asserted through dependent claim 2.

wherein **the processor is further adapted to be involved in an automatic file transfer process** in which, when the i/o port is operatively interfaced with the multi-purpose interface of the computer, and after the at least one parameter has been received by the multi-purpose interface of the computer, the processor executes at least one other instruction set stored in the program memory and thereby causes the at least one file of digitized analog data to be transferred to the computer regardless of the identity of the manufacturer of the computer and without requiring any user-loaded file transfer enabling software to be loaded on or installed in the computer at any time.

As can be seen from the claim language above, the terms "automatic/automatically" relate to actions taken by the processor of the claimed interface device. "Automatic" in this context means: "acting or operating in a manner essentially independent of external influence or control." Ex. 17, The American Heritage College Dictionary (3rd ed. 1993) at 93. In other words, the claimed interface device processor must perform certain actions (recognition and file transfer) "independent of external influence or control." Indeed, the patentee repeatedly distinguished his invention over multiple prior art references based on this meaning of the word "automatic" and its application to the processing actions taken by the interface device processor.

For example, during the prosecution of the '144 patent, the applicant emphasized the automatic recognition process did not involve any processing interaction from the host computer:

> It is respectfully submitted that the **automatic processing for device recognition claim feature covers software that is executed by a processor of a peripheral device (and not a processor of a PC)** and that causes "data transfer and communications enabling data" to be automatically generated and thereafter to be sent to a PC. **This software is run by the peripheral without any user intervention and without any processing intervention via the PC.**

Ex. 18, '144 FH, Sept. 12, 2008 Amend. at 13 (emphasis added). In distinguishing US Patent No. 6,001,604 ("Hashimoto"), the patentee made clear that an interface device, like Hashimoto, that must wait for the host device to signal it before sending "data transfer and communication enabling information" does not perform the "automatic recognition" process as claimed:

> For the reasons stated in the First Preliminary Amendment, **the *automatic processing for device recognition* claim feature covers software that is**

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> **executed by a peripheral device (and not a PC)** and that causes "data transfer and communications enabling data" to be **automatically generated and thereafter to be sent to a PC**. In contrast to this claim element, each one of the devices disclosed in US Patent No. 6,001,604 ("Hashimoto") merely waits on the PC to which it is connected for the PC to enable itself for communications. **In no way can the Hashimoto device's waiting to receive a data terminal ready (DTR) signal of an RS-232 connection [or an equivalent signal under another standard] be regarded as the execution of program steps for data transfer and communication enabling purposes as required by the claims.**

Ex. 19, '144 FH, August 21, 2008 Amend. at 10 (emphasis added). This is because such signaling by the host computer processor would be external influence in the form of processing intervention, which the patentee argued was not covered by the claimed "automatic recognition process."

During the prosecution of the '746 patent, the patentee continued to emphasize the importance of the processor in the interface device acting "independent of external influence or control," including from the host computer. In overcoming a rejection based in part on the Hashimoto reference, the patentee stated "Hashimoto's process (peripheral detecting its connection to host) is **the opposite of the claimed process (host detects a class parameter sent from the peripheral)**." Ex. 13, '746 FH, Oct. 29, 2012 Amend. at 12 (emphasis added). In other words, the processor of the claimed invention must execute its instruction sets for sending a mis-identifying signal to the host without any prompting from the host.

The patentee continued in the same response to distinguish "plug-n-play" systems, such as in U.S. Pat. No. 5,634,075 to Smith (the "Smith reference"). In distinguishing the Smith reference's plug-n-play system, the patentee argued:

> There is no mention of identification information being read or sent. The cited passages of Smith do not mention a peripheral processor automatically providing identification information to the host computer. Instead, **the host computer initiates a "read" function to obtain resource data from the peripheral**. Thus, the plug and play functionality of Smith **does not teach or suggest the processor of the peripheral device automatically sending a class parameter to the host.**

Id. at 13-14 (emphasis added).   The patentee continued emphasizing the necessity for the processor of the claimed interface to act "independent of external influence or control," including from the host computer, throughout at least 20 additional responses and amendments made in the prosecution of the '746 patent, '144 patent, and the '437 patent.[20]

Papst now asks this Court to ignore the commonly understood meaning of "automatic" and "automatically" as well as the arguments made by the patentee, and instead adopt a construction that would broaden the claims to cover interface devices surrendered from the scope of the claims during the prosecution of the asserted patents. The only claim term for which Papst offers a construction for "automatic" is "automatic recognition process"—"process by which the computer recognizes the ADGPD upon connection with the computer without requiring any user intervention other than to start the process." Papst urges the Court to add a clause "other than to start the process." Papst uses deliberately vague language so that it can later argue that any operations, other than the operations it will accuse of being the "automatic recognition process," are operations "to start the process."

Indeed, Papst's expert made clear that, whether plain meaning or Papst's proposed construction applies, Papst's construction provides no boundary on when the claimed automatic functions are initiated (or, under Papst's construction, when the vague "to start the process" step

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[20] *See, e.g.*, Ex. 12, '746 FH Dec. 27, 2011 Amend. at 12-15, 21; Ex. 11, '746 FH May 28, 2013 Amend. at 11-14; Ex. 20, '144 FH Aug. 8, 2007 Amend. at 12-13; Ex. 10, '144 FH May 2, 2008 Amend. at 8-9; Ex. 21, '144 FH Aug. 13, 2009 Amend. at 31, 35; Ex. 22, '144 FH Jan. 29, 2010 Statement at 4; Ex. 8, '144 FH July 26, 2010 Brief at 23-27; Ex. 24, '144 FH Nov. 8, 2010 Reply Brief at 15-16, 21; Ex. 25, '437 FH Aug. 8, 2007 Amend. at 12; Ex. 26, '437 FH Jan. 2, 2008 Amend. at 7-8; Ex. 27, '437 FH May 2, 2008 Amend. at 7-8; Ex. 28, '437 FH Aug. 18, 2008 Amend. at 10-14; Ex. 29, '437 FH Sept. 12, 2008 Amend. at 11-12, 14, 17; Ex. 30, '437 FH Dec. 30, 2008 Amend. at 13-15, 17-18, 26-27; Ex. 31, '437 FH Aug. 31, 2009 Amend. at 33, 35, 39; Ex. 32, '437 FH May 10, 2011 Amend. at 16-18; Ex. 14, '437 FH Sept. 24, 2010 Amend. at 17-18; Ex. 33, '437 FH May 7, 2012 Brief at 18-20; Ex. 23, '437 FH Sept. 25, 2012 Reply Brief at 15-17, 19-20.

ends). Dr. Fernald admitted he could not define the automatic functions and the bounds of the claims would therefore vary based on implementation details that are beyond the scope of the claims. *See, e.g.*, Fernald Tr. at 141:17-24; 144:15-22; 142:8-22.

Papst's construction also allows the host computer to exert influence or control over the processor of the interface device as long as that influence or control is done "to start the process." Here again, Papst construction flies in the face of the very arguments the patentee used to overcome rejections based on multiple prior art references. The patentee made clear during prosecution that the "automatic" in the "automatic recognition process" required the processor of the claimed interface to execute instructions to send a mis-identifying parameter to the host computer with any external influence, including from the host computer itself. Under Papst construction, a host computer would be allowed to issue a "read" command, like in the Smith reference, in order to cause the processor in the interface device to issue its mis-identifying parameter. Yet the patentee clearly and successfully argued in prosecution that such host computer processing was not an "automatic recognition process" as claimed. Papst should not now be allowed to capture claim scope it surrendered during prosecution. Given the clear and unmistakable emphasis as to the meaning of the term "automatic/automatically", this Court should adopt Lenovo and Motorola's construction: "to independently perform an action without any external influence or control."

2.   *Defendants Samsung, LG, Apple, ZTE, and Huawei*

Even if the Court were not to agree with Lenovo and Motorola's position, Samsung, Apple, ZTE, and LG (for purposes of this section, "Defendants") assert that it is clear that the proper construction for the "automatic" terms should *at least* include the language "without user intervention." They therefore propose that "automatic" means "without any user invention." Defendants' proposal is the ordinary meaning of "automatic." *SmartPhone Techs. LLC v. ZTE*

Corp., No. 6:12-CV-350-LED-JDL Mem. Opin. & Order of April 22, 2014 [Dkt. 166], Ex. 3 at

6. Papst, however, argues that Defendants' proposal that recognition and transfer be "without

any user intervention" somehow prevents a user from powering up the host or interface device,

or from connecting the host to the interface device. That argument is a straw man. Defendants

do not argue that a user cannot power up or connect these devices. On the contrary, the claims

contemplate that the devices are connected and powered up. *See, e.g.*, '144 claim 1 ("when the

i/o port is operatively interfaced with the multi-purpose interface of a computer"). But the

claims just as expressly require that recognition and transfer must be "automatic." That word

must mean something, but Papst's proposal reads the word out of the claims.

Indeed, "automatically" has previously been construed in this District as "without user

intervention." Ex. 3, *SmartPhone Techs.* at 6. There, as here, the patentee sought to permit user

intervention to trigger a process that had been claimed as "automatic." The Court rejected that.[21]

Similarly, Papst's proposal to permit a user to "start" the recognition and transfer processes

would render "automatic" synonymous with "user-commanded." That is inconsistent with the

plain meaning of "automatic" and with the manner in which Papst repeatedly described the

"automatic" processes during prosecution. *See e.g.*, Ex. 8, '144 FH, July 26, 2010 Appeal Br. at

17 ("Hashimoto does not describe an automatic recognition process at all and describes data

transmission requiring <u>user intervention</u> and user load application software."); Ex. 21, '144 FH,

Aug. 13, 2009 Amend. at 29-30 ("Fourth, unlike the claimed invention, all of Smith's

embodiments require significant involvement of and [sic] end user with a PC after it has been

sold to him or her . . . . User involvement of this sort is the antithesis of the *multi-use automatic*

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[21] *See id.* ("To include a 'confirmation step' to initiate the automatic translation and storage
steps as SmartPhone proposes would be antithetical in logic and to the '728 patent specification
in steps that are expressly specified to be conducted 'automatically.'")

processor claim feature.") (emphasis in original). Papst should be held to the public

representations it made to the Patent Office as to what "automatic" means.[22] The Court should

therefore reject Papst's attempt to read "automatic" out of the claims and should adopt one of the

proposals made by the Defendants.

E.   Data Transmit/Receive Device

Term to be Construed	Papst's Proposal	Defendants' Proposal
"data transmit/receive device" ['399 patent, claims 1, 11, 14; '144 patent, claims 1, 16, 17; '746 patent, claim 7][23]	"a device that is capable of either (a) transmitting data or (b) transmitting data and receiving data"	"a device that is capable of transmitting analog data to and receiving data from the host device and that is capable of actively communicating with the host device"

After reviewing the intrinsic record, Defendants have modified their construction to more

properly align with the teachings of the specification. Typically, a slash or slant used between

two words indicates an "or" relationship. An example is a college class that is taken "pass/fail."

That class is either "pass" or "fail." The specification, however, appears to use the slash or slant

to indicate an "and" relationship. For example, the specification uses the term "input/output

device," which is clearly for a device that has the ability to receive input **and** provide output.

Likewise the specification uses MFM encoder/decoder to refer to a device that encodes **and**

decodes. '399 patent, col. 3:10-13. Based on these teachings the Defendants have modified their

construction to be, in part, "a device capable of transmitting analog data to **and** receiving data

from the host device."

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[22] *See Fenner Investments, Ltd. v. Cellco Partnership*, 778 F.3d 1320, 1323 (Fed. Cir. 2015) ("Any explanation, elaboration, or qualification presented by the inventor during patent examination is relevant, for the role of claim construction is to 'capture the scope of the actual invention' that is disclosed, described, and patented."); *Id*. at 1325 ("the interested public has the right to rely on the inventor's statements made during prosecution."); *Microsoft Corp. v. Multi-Tech Sys., Inc*., 357 F.3d 1340, 1350 (Fed. Cir. 2004) ("[A] patentee's statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation.").
[23] The list of asserted claims in which the term appears is updated to reflect Papst's preliminary election of asserted claims.

Defendants have also modified their construction so that the "data transmit/receive device" must be capable of transmitting at least analog data. The intrinsic record fully supports this modification. The title of the '399 patent and the '449 patent is "Flexible Interface for Communication Between a Host and an Analog I/O Device Connected to the Interface Regardless the Type of the I/O Device." The "analog I/O device" is the "data transmit/receive device." The language of claim 1 of the '399 patent states, "the data transmit/receive device being arranged for providing analog data." Additionally, the "data transmit/receive device" interfaces with the "second connecting device," which includes "an analog-to-digital converter for converting data." Given these disclosures, the intrinsic record requires that the "data transmit/receive device" be capable of transmitting at least analog data. Finally, the specification requires that the "data transmit/receive device" must be "capable of actively communicating with the host device." The specification states that the "data transmit/receive device **itself can also communicate actively** with the host device via the first and second connecting device." *Id.* at 5:47-48, 5:60-63 (emphasis added).

Given the claim language and the teachings of the specification, the term "data transmit/receive device" should be construed to mean "a device that is capable of transmitting at least analog data to and receiving data from the host device and that is capable of actively communicating with the host device."

F.   **Simulating a Virtual File System to the Host**

Term to be Construed	Papst's Proposal	Defendants' Proposal
Simulating a virtual file system to the host	"emulating a file system, including a directory structure, such that the host device use its native driver to access data even if the data is not actually on a device for which the native driver was designed"	*Revised Proposal:* "presenting to the host device a file system that emulates the file system of the storage device customary in the host device, even though the emulated file system does not exist on the interface device"

Defendants' revised construction gives meaning to all of the claim language in the term "simulating a virtual file system to the host" and is fully supported by the specification. Papst's construction, on the other hand, introduces the unsupported term "native driver" and fails to address that the "virtual file system" must be simulated. As such, the Court should adopt Defendants' proposed construction.

Defendants' revised construction addresses both of the terms "virtual" and "simulating" in the claim phrase. As the Federal Circuit noted, "'[v]irtual' conveys some kind of *as if* action, one thing emulating another; the term was prominently used that way in the computer field at the time of the invention here." *In re Papst Licensing Dig. Camera Patent Litig.*, 778 F.3d 1255, 1268 (Fed. Cir. 2015). In the case of the claims using "virtual file system," it is the interface device emulating a file system of a storage device customary in host device. This is because the interface device "signals to the host device that it is a storage device customary in a host device," and then the host device "communicates with the interface device by means of the driver for the storage device customary in a host device." '449 Patent, col. 11:59-12:3. As part of this process, the interface device simulates a virtual file system to the host, with that file system being a file system for the storage device customary in the host device that the interfaced device identified itself. Only by doing this can the driver customary in the host device communicate with the interface device. The specification clearly describes this operation:

> Regardless of which data transmit/receive device at the output line 16 is attached to the second connecting device, the digital signal processor 13 informs the host device that it is communicating with a hard disk drive. If the host device receives the response that a drive is present, it then sends a request to the interface device 10 to read the boot sequence which, on actual hard disks, normally resides on the first sectors of the disk. **The digital signal processor 13, whose operating system in stored in the memory means 14, responds to this instruction by sending to the host device a virtual boot sequence which, in the case of actual drives, includes the drive type, the starting position and the length of the file allocation table (FAT), the number of sectors, etc., known to those skilled in**

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> **the art.** Once the host device has received this data, **it assumes that the interface device 10 according to a preferred embodiment of the present invention is a hard disk drive.**

Id., col. 5:19-35 (emphasis added). As this section of the specification demonstrates, once the host device is signaled by the interface device that it is a storage device (in this case a hard disk drive) and receives the "simulated" file system information, then the host device will assume the interface device is that type of storage device. Once this occurs, the interface device can provide a directory structure for the virtual files in the simulated virtual file system which it is emulating as a file system from a storage device customary in the host device. Again, the specification describes these actions:

> **In reply to an instruction from the host device to display the directory of the "virtual" hard disk drive simulated by the interface** device 10 with respect to the host device, **the digital signal processor can respond to the host device in exactly the same way as a conventional hard disk would, namely by reading on request the file allocation table or FAT on a sector specified in the boot sequence, normally the first writable sector, and transferring it to the host device, and subsequently by transferring the directory structure of the virtual hard disk.** Further, it is possible that the FAT is not read until immediately prior to reading or storing the data of the "virtual" hard disk and not already at initialization.

Id., col. 5:35-47 (emphasis added). These teachings of the specification describe what the claim means by "simulating a virtual file system." The interface device represents itself as a storage device customary in the host device and then presents a file system of such a device by emulating that file system to the host device. As such, the Court should construe "simulating a virtual file system" to mean "Presenting to the host device a file system that emulates the file system of the storage device customary in the host device, even though the emulated file system does not exist on the interface device".

G.   The Customary Terms

Exemplary Term to be Construed	Papst's Proposal	Defendants' Proposal
"the driver for the [input/output] [storage] device customary in a host device" ['399 patent, claims 1, 11; Ex. 2, claim 1]	"the driver for the data [input/output] [storage] device normally part of commercially available computer systems"	"a generic driver for a class of generic input/output devices typically found on the host device at the time of the invention, such as hard disks, graphics devices, printers, floppy disk drives, CD-ROM drives, or tape drives"
"the usual driver for the [input/output][storage] device"□['399 patent, claim 14]	"the set of software routines used to direct a data [input/output device] [storage device] normally part of commercially available computer systems"	"a generic driver for a class of generic input/output devices typically found on the host device at the time of the invention, such as hard disks, graphics devices, printers, floppy disk drives, CD-ROM drives, or tape drives"

To begin Papst does not present any argument that the part of Defendants' construction that reads "generic driver for a class of generic input/output devices is incorrect. In fact, Papst states that "the specification describes a wide range of exemplary, but sometimes generic, drivers and interfaces, ranging from hard drives, floppy disk drives, CD-ROMS, tape drives, SCSI, etc. …." Papst Br. at 24.   This is exactly the language proposed in Defendants' construction: "generic driver for a class of generic input/out devices … such as hard disks, graphics devices, printers, floppy disk drives, CD-ROMs and tape drives."

The parties' primary dispute here primarily turns on whether the claimed devices and drivers must have been customary "at the time of the invention." The Defendants have proposed that this Court construe the "customary" terms (both the "customary" devices and the "customary" or "usual" drivers) using the exact words spoken by the Federal Circuit concerning this term. Papst, instead, asks this Court to ignore several words used by the Federal Circuit.

The MDL Court originally construed the "customary" terms as being "normally present within the chassis of most commercially available computers at the time of the invention." The Federal Circuit disagreed that a device must be present within the chassis. But the Federal

Circuit did not disturb the rest of the MDL Court's construction. *In re Papst*, 778 F.3d at 1271.

On the contrary, the panel announced in clear terms: "The written description makes clear that it

is enough for the device to be one that ***was normally part*** of commercially available computer

systems ***at the time of the invention***." *Id.* at 1270. (emphasis added).

Aside from being the exact words used by the Federal Circuit, the temporal limitation of

the construction is undoubtedly correct. As the MDL Court had reasoned on this point:

> The next question — customary as of when? — must be answered: as of 1998
> when Mr. Tasler applied for the '399 Patent. A court must interpret the words of
> a contested claim from the perspective of one skilled in the art at the time of
> invention. *See Phillips*, 415 F.3d at 1313. The word "customary" is time-
> dependent, like the word "conventional" construed by the court in *Muniauction,
> Inc. v. Thomson Corp.*, 532 F.3d 1318, 1326 (Fed.Cir. 2008). There, the court
> determined that "conventional" when modifying the term "internet browser"
> meant web browsers in existence at the time of the invention. *See id.*; *accord PC
> Connector Solutions LLC v. SmartDisk Corp.*, 406 F.3d 1359, 1363-64 (Fed.Cir.
> 2005) (input/output port "normally" connectible to a computer port meant
> technology existing at the time of the invention). A claim cannot be interpreted to
> have different meanings at different times. *See PC Connector*, 406 F.3d at 1363.
> The word "customary" means customary in a host computer at the time of the
> invention.

670 F.Supp.2d at 53 (underscoring added). *See PC Connector*, 406 F.3d at 1363 (noting that

terms like "normally," "conventionally," "traditionally," and "standard" are implicitly time-

dependent); *see also Chrimar Sys. Inc. v. Alcatel-Lucent USA Inc.*, 2016 WL 1228767 *8-9

(E.D.Tex. Mar. 28, 2016). Papst offers no argument that undermines this reasoning. Papst's

argument that claims *might* be drafted to cover after-arising, but pre-installed, technology is

unavailing. That is not how Mr. Tasler's claims were drafted. Papst cannot use claim

construction to rewrite them. Furthermore, the specification does not disclose any aspirations to

use after-arising technology. Thus, Papst's argument that the Defendants' proposed construction

excludes any disclosed embodiments, preferred or otherwise, fails. Accordingly the Court

should hold that the claimed "customary" devices and drivers must have been customary "at the

time of the invention."

H.   The User-Loaded Terms

Exemplary Term to be Construed	Papst's Proposal	Defendants' Proposal
"user-loaded file transfer enabling software" ['144 patent: claims 1, 86; '746 patent, claims 1, 31, 34; '437 patent, claim 1]	No construction necessary other than other constructions offered.	"specific drivers or software for the [analog data acquisition device or the interface of the analog data acquisition device] / [ADGPD or the i/o port] beyond that provided in or with the operating system or BIOS"
"whereby there is no requirement for any user-loaded file transfer enabling software to be loaded on or installed in the computer in addition to the operating system" ['746 patent, claim 1] "without requiring any end user to load any software onto the computer at any time" ['746 patent, claim 17; '144 patent, claims 1, 84] "without requiring any user- loaded file transfer enabling software to be loaded on or installed in the computer" ['746 patent, claims 31, 34; '144 patent, claims 1, 86; '437 patent claims 1, 43]	"without requiring the end user to install or load specific drivers or software for the [ADGPD/analog data acquisition device/analog data acquisition and interface device] beyond that included in the operating system or BIOS"	No construction necessary beyond the proposed construction identified above.

With respect to the first user-loaded term (i.e., "user-loaded file transfer enabling

software") Papst does not contest that the term refers to specific drivers or software that are

beyond that provided "in" the operating system or BIOS. Papst Br. at 32-35. Indeed, Papst's

other user-loaded terms include this specific language. *Id.* The only issue is whether the specific

drivers or software can also be beyond that provided "with" the operating system or BIOS

consistent with Defendants' construction. They can. There is nothing in the claims,

specification or file history that restricts file transfer enabling software from being provided

"with" (as opposed to "in") an operating system or the BIOS. Both options are available.

Moreover, Papst agreed to a construction in the MDL litigation that the user-loaded file transfer

enabling software can be beyond that provided "in or with" the operating system or BIOS. That

is consistent with Defendants' construction here. That agreed construction should apply in both litigations.

With respect to the remainder of the "user-loaded" terms, no further construction is necessary as the surrounding plain language by itself is clear that user does not have to load any software. A lay juror can readily understand this. But instead of relying on the plain language of these terms, Papst tries to narrow the definitions in a way that departs from the plain language of the claims. Specifically, several of the "user-loaded" terms state that the user is not required to load "any software on to the computer at any time," but Papst's constructions narrow this to the user not being required to load "specific drivers or software … beyond that included in the operating system or the BIOS." Papst Br. at 32-34. There is no support for this narrowing in the claims, the specification or the file history, nor does Papst provide any such authority. "Any software" literally means "any software," and no construction is necessary. The only portion of the "user-loaded" terms that needs to be construed is the "user-loaded file transfer enabling software" language and the definition of that term is largely agreed as discussed above.

I.   The Input/Output Port

Term to be Construed	Papst's Proposal	Defendants' Proposal
"Input/Output (i/o) port" ['144 Patent, claims 1, 2, 16, 86; '437 Patent, claim 1]	No construction necessary apart from the other proposed constructions, if any.	Revised Construction: "the physical components necessary to make a connection."

After reviewing Papst's brief and deposing Dr. Fernald, Defendants have revised the construction of "Input/Output (i/o) port" as follows: "they physical components necessary to make a connection." Dr. Fernald agreed during his deposition that an I/O port is the component necessary to make a connection. Fernald Tr. at 167:11-23. And, in the context of the asserted claims, the components are physical. The Court should adopt Defendants' revised construction.

J.   The Analog Acquisition Channel Terms

Term to be Construed	Papst's Proposal	Defendants' Proposal
"analog signal acquisition channel[s]" / "acquisition channels" / "analog acquisition channel" □[10, 35; '437 Patent, claims 1, 13, 14, 18, 43, 45]	No construction necessary apart from the other proposed constructions, if any.	"distinct analog signal input[s] each separately connected to the [analog data acquisition device] [data acquisition device] [ADGPD] [analog data device] and to signal processing circuitry"

The dispute is whether the claimed "channel**s**" are distinct analog signal inputs with separate connections (consistent with Defendants' construction) or that a single analog signal input can somehow constitute multiple "channels" (as Papst argues in support of its "plain meaning" construction). The plain language of the claims and the specification confirm that each "channel" is a distinct analog signal input with separate connections.

At times the patentee claimed an "analog acquisition channel" (singular) and at other times claimed "acquisition channels" (plural). Defendants' construction accounts for this difference because it recognizes what should be obvious–that each channel is a distinct analog input with a separate connection. Papst seeks to conflate the singular and the plural when it argues that a person of ordinary skill "would understand the ordinary meaning of the 'analog acquisition channel' terms to include **path****s** along which analog signals can be acquired." Papst Br. at 37. Such an interpretation is plainly inconsistent with the claim language. In order to make clear that where multiple "channels" are claimed there must be multiple channels in the accused device (*i.e.*, distinct analog signal inputs with separate connections), Defendants' construction should be adopted.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic serve are being served this 6th day of December, 2016, with a copy of the foregoing document via the Court's CM/ECF system pursuant to Local Rule CV-5(a)(3).

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